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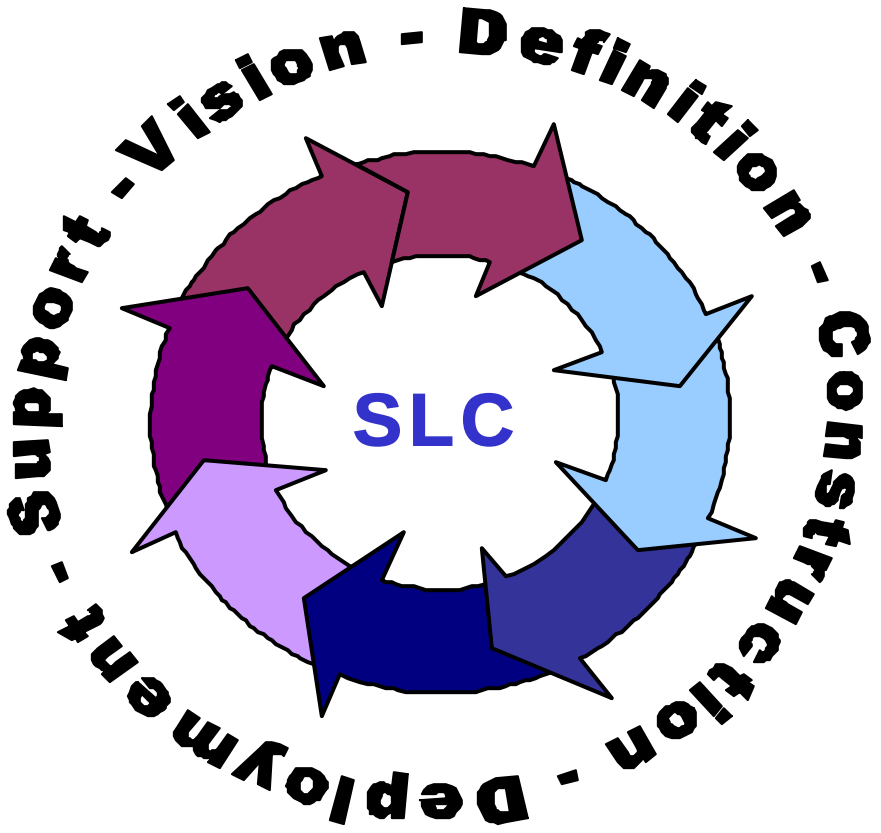


The Solution Life Cycle

Enterprise Configuration Management Plan

Version 2.0
January 20, 2003

Executive Sponsor: _____

Organizational Location: _____

Enterprise Configuration Management Lead: _____

Enterprise CCG Facilitator: _____

Document History

Update the document history information below. Also, update the "Status" and "Version" number in the header to match this section.

Version Number	Date Modified	Name	Description

Table of Contents

1. Introduction

- This Configuration Management Plan (CMP) addresses the configuration management activities to be performed at FSA enterprise level. Initial FSA organizational elements to be part of this CM Plan are:
  - EAI
  - ITA
  - SLC/CMM
  - Technical Policy and Standards
  - (Monitor) VDC Infrastructure
- Rational Software will be used for Enterprise level CM purposes
- Before beginning the enterprise CM activities, FSA needs to:
  - Choose an organizational location to place the Enterprise Change Control Group
  - Choose an organizational location to place the Enterprise Configuration Management Support Group
  - Establish the Enterprise Change Control Group
  - Establish the Enterprise Configuration Management Support Group
  - Develop a transition plan to delineate projects that are contractually too advanced to begin using Configuration Management techniques from those that should totally or partially use these processes.

This Configuration Management Plan is a critical component of the management of software/systems change throughout FSA. Each FSA project that is new or has transitioned into using the Solution Life Cycle Configuration Management Process Guide Draft V2.0, 10 24 02.doc (SLC) should have its own project CMP. For any change, such as changes in standards, work products, upgrades and applications, that affects multiple projects, the proper forum to address the issue is the FSA Enterprise Change Control Group. A properly executed configuration management plan helps ensure that (1) delivered solutions meet stated requirements, (2) delivered solutions are properly constructed, and (3) the risk of rework is minimized by enabling developers to use correct versions. Additionally, at the enterprise level, change control processes prevent one project's solution from having an unintended adverse effect on other projects.

2. Purpose and Scope

Configuration management refers to the processes, tools, and resources required ensuring consistency and integrity between configuration items and their environment as they change over time. Configuration management includes version control and change control. Version control includes tracking the changes made to code and why the changes were made. This is discussed in the configuration management activities section. Change control ensures that changes made are necessary and within the scope of the project. This is discussed in the configuration control section.

The purpose of this configuration management plan is to provide FSA with a framework from which configuration management process will be established, maintained, and followed. This framework will include:

- Roles and responsibilities required within the configuration management plan
- Steps required to version files
- Servers involved in the FSA enterprise level repository

The scope of this document includes development environments for two pilot projects. Version control between environments should be controlled and documented once a permanent Enterprise Change Control Group and transition plan is complete.

3. Organization, Responsibilities and Resources

This section details the authority and the specific responsibilities for configuration management across the enterprise, and identifies the specific resources necessary to perform effectively.

The Enterprise Configuration Management Support Group is headed by the Enterprise Configuration Management (CM) Lead and other configuration management support roles defined below. The Enterprise Change Control Group monitors and controls versions of standards and decisions that cross project boundaries. The Enterprise Change Control Group is a designated group across the FSA organization that will be responsible for handling changes in standards affecting more than one project or issues escalated from the project CCGs. The Enterprise Configuration Management Support Group includes an Enterprise CCG Facilitator to provide support for the Enterprise CCG. The Enterprise Configuration Management Support Group also conducts Configuration Management Awareness training and periodic baseline audits for projects in order to assist projects in managing their configuration management function.

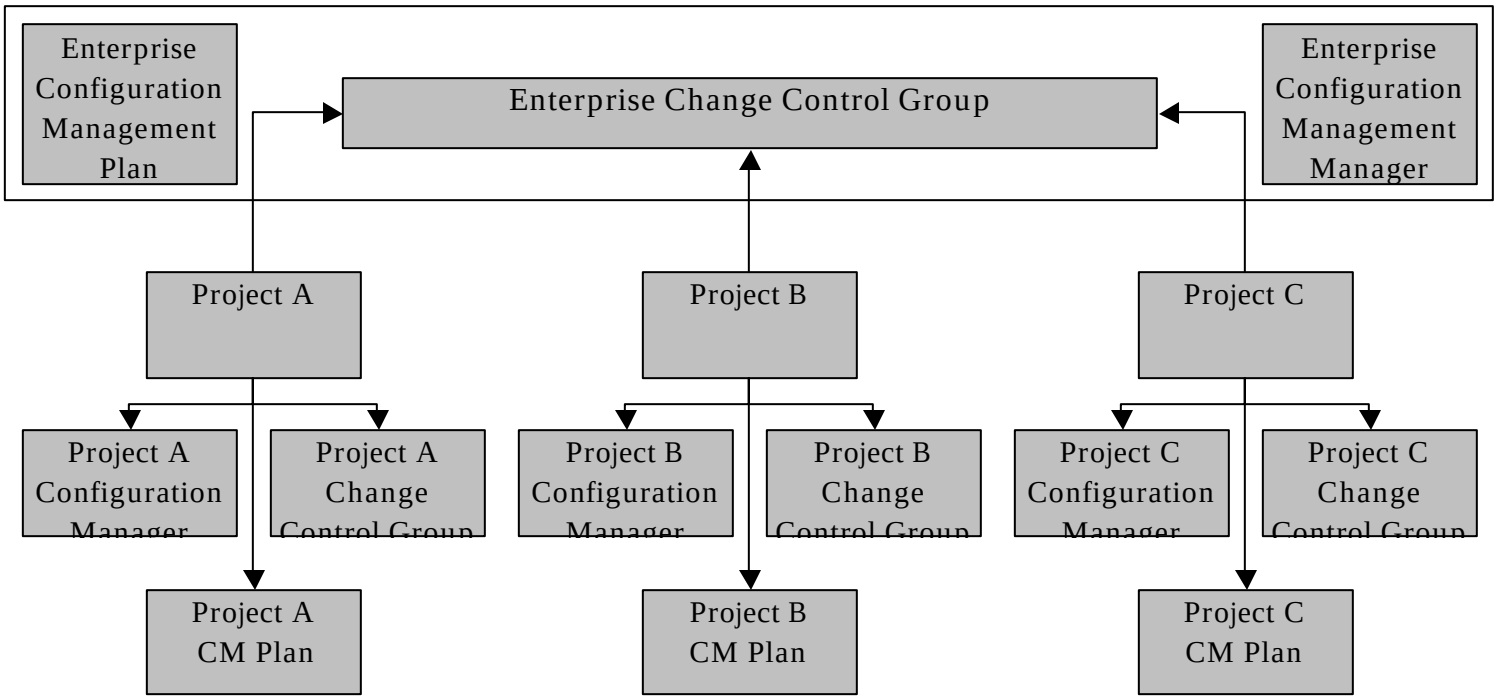
The initial manpower commitment to support the enterprise Configuration Management / Change Control Group function is expected to be a cross functional team composed of representatives of major elements of FSA and a support staff of 3 Full Time Equivalents (FTEs). Six support roles are envisioned. (All roles are detailed in section 3.1)
The cross functional roles are:

- Enterprise CCG Chairperson
- Enterprise CCG Member

The six support staff roles are:

- Enterprise CM Lead
- Enterprise CCG Facilitator
- Enterprise CM / CCG Secretariat
- Enterprise CM / CCG Software Librarian
- Enterprise CM / CCG Trainer
- Enterprise CM / CCG Auditor

ORGANIZATION OF CONFIGURATION MANAGEMENT



3.1 Role Descriptions

Change Control Group – The Change Control Group is a cross-functional representation of FSA that meets in order to handle issues and changes that potentially cross project boundaries. The Change Control Group deliberates by consensus. Issue resolutions that do not get a consensus are escalated to the Leadership Council. The Change Control Group will have standing weekly meetings scheduled throughout the year. Special sessions may be called for emergency issues or, if no actions are scheduled for review, the meeting may be cancelled. The Enterprise CM / CCG Secretariat, provides the documentation support for the Enterprise Change Control Group Meetings.

Enterprise Configuration Management Support Group – The Enterprise Configuration Management Support Group supports the Enterprise CM effort by providing a CM Lead, facilitating the CCG, and providing resources for documentation, training and auditing.

Enterprise CCG Chairperson – The Enterprise CCG Chairperson chairs the Change Control Group and participates in deliberating issues and changes brought before the Change Control Group.

Enterprise CCG Member – The Enterprise CCG Member participates in deliberating issues and changes brought before the Change Control Group.

Enterprise CM Lead - The Enterprise CM Lead manages the Enterprise Configuration Management Support Group. The Enterprise CM Lead is responsible for insuring that there is an Enterprise Configuration Management Plan and an Enterprise Repository. Other responsibilities include for administering the Enterprise Change Control Group and leading a staff that together with the Enterprise Change Control Group achieves the objectives of the Configuration Management effort.

Responsibilities include:

- Maintains the vision of CM across FSA
- Has accountability for CM Program
- Reviews CM/CCG activities with senior management on a periodic basis
- Plans CM/CCG activities
- Manages Configuration Management Plan development
- Manages FSA baseline documents
- Manages repository & access authority
- Manages CM baseline audit activities
- Manages change control processes
- Manages CM awareness/support training
- Manages metrics that measure effectiveness of the Configuration Management/Change Control processes
- Coordinates tool support allocated to Configuration Management/Change Control processes
- Coordinates FSA wide CM/CCG issues – manages to closure

Enterprise CCG Facilitator – The Enterprise CCG Facilitator primarily administrates and coordinates the Enterprise Change Control Group.

Responsibilities include:

- Receives and administers enterprise level change requests and problem reports
- Manages CCG meetings
- Coordinates baseline decisions
- Coordinates configuration item decisions resulting from CCG meetings
- Coordinates changes emanating from the Change Control Group
- Coordinates extracting products such as reports or configuration items
- Escalates unresolved CCG issues

Enterprise CM/CCG Secretariat - The Enterprise CM/CCG Secretariat primarily supports the print and electronic correspondence media requirements for the Enterprise Configuration Management Support Group.
Responsibilities include:

- Configuration Management Plan (CMP) editor
- Drafts correspondence for FSA communication
- Drafts correspondence for the CM/CCG members
- Drafts meeting minutes and decisions
- Develops and integrates metrics into reports for senior management review

Enterprise CM/CCG Librarian - The Enterprise CM/CCG Librarian primarily supports electronic storage associated with the Enterprise CM/CCG activities.
Responsibilities include:

- Manages baseline library
- Administrates library access
- Updates baseline
- Creates products from the baseline
- Staffs helpdesk for baseline library support
- Identifies and indexes configuration items
- Develops library metrics

Enterprise CM/CCG Trainer – The Enterprise CM/CCG Trainer primarily trains turnover personnel for both the Enterprise and the project level CM/CCG functions.
Responsibilities include:

- Builds and enhances CM/CCG training materials
- Maintains CM/CCG training materials
- Maintains repository training materials
- Trains new CM/CCG personnel
- Trains repository users
- Orients project personnel

Enterprise CM/CCG Baseline CM Auditor – The Enterprise CM/CCG Auditor primarily assists the projects by training and evaluating project CM/CCG efforts.
Responsibilities include:

- Conduct audits on a periodic basis of projects under CM control
- Provide audit preparation, assistance and orientation for 4-6 hours per audit (train, prepare, conduct, follow up, & metrics)

4. Configuration Management Activities

Configuration management activities will include several areas of the process. Configuration items must be identified and version control procedures must be established. Documents will be checked in and out through a configuration management tool. A standard directory structure within the repository should also be established. These guidelines will ensure processes continue efficiently and effectively. Configuration Management begins day one of conception. Cross project issues and standards are committed to version control for future use and tracking. All changes must be controlled to ensure accurate tracking.

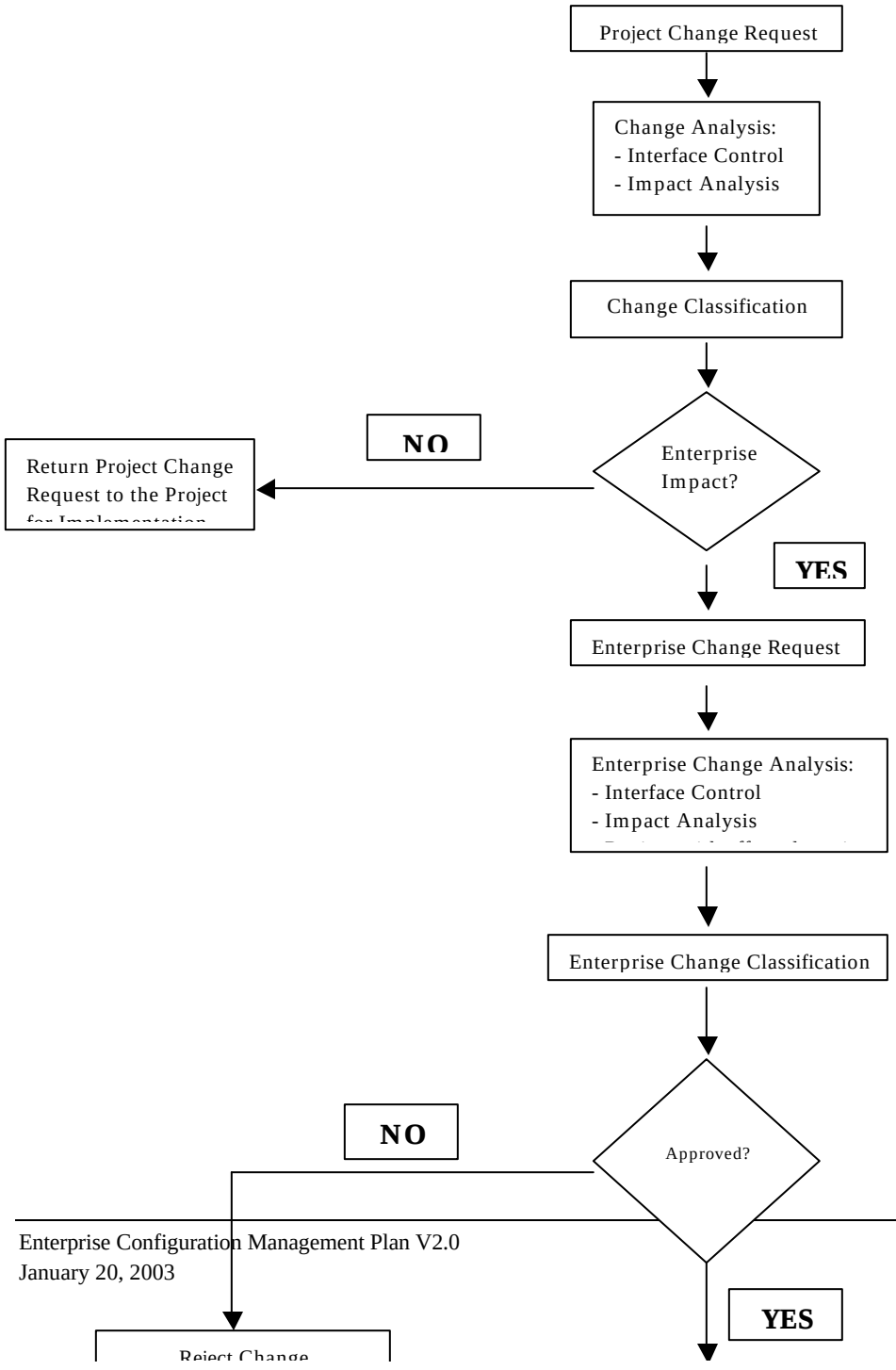
4.1 Configuration Management Process

The Enterprise CM Lead must ensure that a formal change control process is documented and followed. The change control process should establish an audit trail of baseline changes and define how change requests are reviewed and authorized by the Enterprise Change Control Group. The process includes activities for tracking and classifying change requests, conducting impact analyses and obtaining formal approvals. Change control is performed on an on-going basis. The CM Lead must ensure that all projects and CCG members are familiar with and adhere to the change control process.

At the Project Level, the CM Lead establishes a change control process that is specific to the needs of the project and interfaces with the Enterprise Level. At the Enterprise Level, the Enterprise CM Lead prepares a change control process for the Enterprise CCG that interfaces with the project. The Enterprise level process is reviewed and approved by the Enterprise CCG. Changes that impact multiple systems or interfaces are reviewed at the Enterprise Level. Changes that do not impact other systems are reviewed at the Project Level. Changes approved by the Enterprise CCG are implemented by the affected Projects.

The complexity of the change control process is directly related to the complexity and risk to the configuration item. For example, the change control activities for standards documentation may amount to only a few simple steps with little oversight. In contrast, the activities for source code change control would have many steps and multi-level oversight. There are however, some basic components to a change control process. An example of an Enterprise change control process is shown in the following diagram:

4.2 Enterprise CM Change Control Flow Chart



4.3 Configuration Identification

Configuration Identification is the process for selecting, identifying, and naming configuration items. The technology for handling configuration identification and storing will be Rational Software ClearCase and ClearQuest. Other Rational Software tools may be used as needed. A configuration item is a file that is managed as a single item and falls under configuration management. Some items are initiated and operated independently of the items; others are dependent and perform functions that satisfy end—user requirements. For the CIO elements in the first implementation phase of the Enterprise CM (EAI, ITA, SLC / CMM, and Technical Policy and Standards), baselining consists of identifying and storing decisions affecting multiple projects (such as standards, procedures, and policies). Decisions are typically reflected in documents, which become configuration items. As multi-project issues arise for handling by the Enterprise CM, the change request and decision becomes part of the baselined data.

4.4 Configuration Control

Configuration control is the process of controlling change and is the most visible element of configuration management. Configuration control includes the systematic evaluation, coordination, and approval or proposed changes to configuration items. Project configuration control will often concern itself with actual code whereas Enterprise configuration control is more likely to be concerned with policies and standards captured in documents.

Project change control organizations will escalate to the Enterprise Change Control Group issues that affect other projects or are beyond the scope of the project itself. FSA organizational elements may also propose new standards that affect existing projects. The change control group will monitor all changes and change requests. All requests will be checked against FSA standards, policies, and contractual issues to identify impacts that are very improvements over the existing situation or not supportable for other reasons. Also, new requirements and standards that have not been documented or agreed upon will also be identified through this change control process.

4.5 Configuration Status Accounting

Configuration Status Accounting is the process of recording, monitoring, and reporting of all changes to established configuration items. The following information should be provided for each change:

- Description of the change / problem
- Impact of the change / problem
- Status of the Change Request / SIR

- Assigned Individual
- Any associated dates

The following list illustrates the kinds of reports that could be made available as needed (provided the data is stored in an appropriate format):

- Listing of pending and completed Enterprise CCG actions by time period
- List of projects affected by a particular change request
- Dollar cost implication of a particular decision
- Listing of active standards
- Status of a particular change request

4.6 Configuration Baseline Auditing

A configuration baseline is a snapshot of the entire environment when it is ready to begin a new stage of development or testing and is added to as the work progresses. At the FSA wide level, many of the standards and policies can be viewed as in the maintenance part of the life cycle but still have versions as standards and policies are changed. The baseline serves as a comparison for future releases and phases. The purpose of configuration baseline auditing is to verify that a configuration baseline is consistent with its requirements and specifications, and to validate that it is complete. Configuration baseline auditing includes ensuring that the baseline contains the correct versions of all intended configuration items and that they correspond to the information contained in the baseline's configuration status report. Configuration baseline auditing also includes ensuring that all required functionality for the baseline has been tested.

The Enterprise CM lead, in conjunction with QA and IVV, will conduct baseline audits of the Enterprise baseline once a year on all configuration items. The Enterprise CM Lead, in conjunction with QA and IVV, will also conduct periodic audits of projects in order to ascertain the level of CM compliance.

Baselines come at specific times in the life of a project. Baselines will be created by manually copying the entire repository directory structure and saving it into a folder with the date and version number included. Baselines will be taken, at a minimum, when the development environment is initially migrated into the testing environment and then to the staging and performance test environments. This includes baselines taken at the design, build, test, and production stages. As each environment is updated, it should be documented and that version will be identified.

The configuration baseline audits assess:

- Integrity, completeness, and correctness of the baselines
- Integrity of the configuration management library system
- Compliance with standards and procedures

Responsibility for tracking all discrepancies will be allocated to the Project Manager.

5. Audits and Reports

Name of Configuration Management activity (Report, Audit, Baseline, etc.)	SLC Phase	Scheduled completion date

6. Schedules

TBD

Appendix A – An Example of Enterprise Configuration Management Procedures

Situation: Project A requires an interface to system B. Project A's software runs on mainframe C. System D runs on a different manufacturing type mainframe E.

#	Step	Responsible	Tool/Mechanism
1	Project RDM person perceives that he/she has a multi-project requirement	Project RDM person	Requirements list
2	RDM person escalates issue to RDM Lead	Project RDM person	Communication
3	RDM Lead escalates issue to Project CCG	Project RDM Lead	Communication
4	New document?	Project RDM person	Depends on Project CM Plan/Processes
5	Create document in repository	Project RDM person	Depends on Project CM Plan/Processes
6	Add document to version control	Project RDM person	Depends on Project CM Plan/Processes
7	Make document available to Project CCG	Project CCG Administrator	Depends on Project CM Plan/Processes
8	Project CCG escalates issue to Enterprise CCG	Project CCG Chairperson	Depends on Project CM Plan/Processes
9	Project sends appropriate documentation to the Enterprise CCG	Project CCG Administrator	See IT Standards in Technology Handbook
10	Document entered into Enterprise Repository	Enterprise CCG Administrator	See IT Standards in Technology Handbook
11	Add document to version control	Enterprise CCG Administrator	See IT Standards in Technology Handbook
12	Make document available to the Enterprise CCG	Enterprise CCG Administrator	See IT Standards in Technology Handbook
13	Enterprise CCG convenes	Enterprise CCG Chairperson	Enterprise CM Plan/Processes
14	Enterprise CCG decision placed into Enterprise repository	Enterprise CCG Administrator	See IT Standards in Technology Handbook
15	Enterprise CCG decision broadcast to affected and interested persons	Enterprise CCG Administrator	See IT Standards in Technology Handbook
16	Both Project A and maintainer of System B enter change into project baselines	Project CCG Administrators	Depends on Project CM Plan/Processes

Appendix B - Enterprise Configuration Item Identification Index Template

Executive Sponsor:	CIO
Project Name:	Enterprise CM
Project Manager:	Enterprise CM Lead
Configuration Manager:	Designated CM Manager

Configuration Item Name	*Owner*	*Location(s)*	*Location Type/Description/Comments*
Configuration Item (CI)	Enterprise CM	Enterprise CM Repository	Enterprise CCG Charter
Configuration Item (CI)	Enterprise CM	Enterprise CM Repository	CM Plan
Configuration Item (CI)	Project A CM CCG	Enterprise CM Repository	Enterprise Change Request from Project A*
Configuration Item (CI)	Enterprise CM	Enterprise CM Repository	Minutes of Enterprise CCG Meeting
Configuration Item (CI)	Enterprise CM	Enterprise CM Repository	Enterprise Approved Decision Document*

*These documents also reside in the appropriate project CM repositories.